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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/803,445

Applicant(s)

JESSOP, RICHARD V.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 24-34 is/are rejected.
- 7) ☒ Claim(s) 22-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: .

*Specification*

1. The disclosure is objected to because of the following informalities:

On Page 81, Line 6 instead of "(as shown in the drawing below)" the Figure number should be defined.

Appropriate correction is required.

*Claim Objections*

2. Claim 23 objected to because of the following informalities: On page 113, Line 8, before word "and" there is an open parenthesis. Since parenthesis is not close it is not clear what the applicant is trying to separate. Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan (US Patent No. 5,659,330, hereinafter Sheridan1) in view of Comiskey et al. (US Patent No. 6,473,072 B1).

As to claim 1, Sheridan1 teaches display device comprising: a first sheet, the first sheet having an outer and inner surface (See Fig. 11, item 84, in description See Col. 7, Lines 18-50); a second sheet, the second sheet having an outer surface and an inner surface (See Fig. 11,

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item 82, in description See Col. 7, Lines 18-50); a first liquid; a second liquid, the first and second liquids being immiscible with respect to each other (See Fig. 1, 11, items 22, 24, in description See Col. 3, lines 38-47); sealed space between inner surface of the first sheet and the inner surface of the second sheet, the first and second liquids being enclosed therein (See Fig. 3, items 12, 14, 17, in description See Col. 3, Lines 23-38); a stylus, the stylus having an electrical switch associated with each of the electrical elements and being in electrical communications with the electrical elements (See Fig. 1, 11 items 90, 100, 102, P, in description See Col. 5, Lines 23-28); such that activation of the switch on the stylus and movement of the stylus in a proximity of the first sheet will cause the first liquid to move to a position such that a chosen one of components is magnified when viewed through the first sheet (See Fig. 11, items 90, 94, 102, in description See Col. 7, Lines 18-51).

Sheridon1 does not teach a plurality of colored components, components being located on the outer surface of the second sheet; plurality of electrical elements, each element being associated with a color component.

Comiskey et al. shows the drawing system permits the user to draw in multiple colors using pixilated rear line electrodes (See Fig. 14a, 14b, items 144a, 144b, 144c, in description See Col. 15, Lines 8-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Comiskey et al. approach in Sheridan1 apparatus in order to change display color on the first substrate upon activation of the switch (See Col. 2, Lines 64-65).

As to claim 2, Comiskey et al. teaches a light reflecting surface located on the outer surface of the second sheet (See Col. 3, Lines 35-38).

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As to claim 3, Comiskey et al. teaches a light source located on the outer surface of the second sheet (See Col.3, Lines 35-38).

As to claim 14, Sheridon1 teaches display device comprising: a first sheet, the first sheet having an outer and inner surface (See Fig. 11, item 84, in description See Col. 7, Lines 18-50); a second sheet, the second sheet having an outer surface and an inner surface (See Fig. 11, item 82, in description See Col. 7, Lines 18-50); a first liquid; a second liquid, the first and second liquids being immiscible with respect to each other (See Fig. 1, 11, items 22, 24, in description See Col. 3, lines 38-47); sealed space between inner surface of the first sheet and the inner surface of the second sheet, the first and second liquids being enclosed therein (See Fig. 3, items 12, 14, 17, in description See Col. 3, Lines 23-38); a plurality of repellent surfaces, the surfaces being capable of repelling the first liquid and being located on the inner surface of the second sheet (See Fig. 13-15, items 170,172,174,180,182,184, in description See Col. 8, Lines 5-18); such that activation of the electrical elements will affect the shape of the droplet such that a chosen one of the colored components is magnified when viewed through the first sheet (See Fig. 13-15, items 170,172,174,180,182,184, in description See Col. 8, Lines 5-42).

Sheridon1 does not teach a plurality of colored components, components being located on the outer surface of the second sheet; plurality of electrical elements, each element being associated with a color component.

Comiskey et al. shows the drawing system permits the user to draw in multiple colors using pixilated rear line electrodes (See Fig. 14a, 14b, items 144a, 144b, 144c, in description See Col.15, Lines 8-58). It would have been obvious to one of ordinary skill in the art at the time of

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the invention to implement Comiskey et al. approach in Sheridon1 apparatus in order to change display color on the first substrate upon activation of the switch (See Col.2, Lines 64-65).

As to claim 15, Comiskey et al. teaches a light reflecting surface located on the outer surface of the second sheet (See Col.3, Lines 35-38).

As to claim 16, Comiskey et al. teaches a light source located on the outer surface of the second sheet (See Col.3, Lines 35-38).

4. Claims 4,7-8, 9,12-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridon (US Patent No. 5,757,345, hereinafter Sheridon2).

As to claims 4, 7-8 Sheridon2 teaches a display device for modifying the color of light with: a first sheet, the first sheet, the first sheet having an outer surface and inner surface; a second sheet, the second sheet having an outer surface and inner surface (See fig. 14, items 154, 152, in description see Col. 7, Lines 64-68 and Col. 8, Lines 1-3); a first colored liquid having a first color and an electrical charge; a second colored liquid, the second liquid having a second color; a third liquid, the first, second and third liquid being immiscible with respect to each other (See fig. 14, items 170,172,174, in description see Col. 8, Lines 5-13); a sealed space between the inner surface of the first sheet and the inner surface of the second sheet, the first, second and third liquids being enclosed therein (See Fig. 2, items 12,14,17,22, in description See Col. 3, lines 14-29); an electrical element capable of attracting the first liquid when activated; such that activation of the electrical element will cause the first liquid to move to a position proximate to the electrical element such that a chosen one of the colored liquids is visible when

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viewed through the first sheet (See fig. 14, items 170,172,174,160,162,164,156, in description See Col. 8, Lines 30-49)

Sheridon2 does not teach the second liquid being attached to the to the first liquid or to the third liquid. Since all three liquids are being immiscible to each other it would have been obvious to one of ordinary skill in the art at the time of the invention to implement color liquids in Sheridan2 apparatus as being attachable so at least one of the droplets of the set will expand in a space commonly shared by the droplets of each set to create a color pixel of an image (See Col. 1, Lines 45-48).

As to claims 9, 12-13 Sheridan2 teaches a display device for modifying the color of light with: a first sheet, the first sheet, the first sheet having an outer surface and inner surface; a second sheet, the second sheet having an outer surface and inner surface (See fig. 14, items 154, 152, in description see Col. 7, Lines 64-68 and Col. 8, Lines 1-3); a first colored liquid having a first color and an electrical charge; a second colored liquid, the second liquid having a second color ; a third liquid, the first, second and third liquid being immiscible with respect to each other (See fig. 14, items 170,172,174, in description see Col. 8, Lines 5-13); a sealed space between the inner surface of the first sheet and the inner surface of the second sheet, the first, second and third liquids being enclosed therein (See Fig. 2, items 12,14,17,22, in description See Col. 3, lines 14-29); an electrical element capable of attracting the first liquid when activated; such that activation of the electrical element will cause the first liquid to move to a position proximate to the electrical element such that a chosen one of the colored liquids is visible when viewed through the first sheet (See fig. 14, items 170,172,174,160,162,164,156, in description See Col. 8, Lines 30-49)

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Sheridon2 does not teach the movement of the first liquid will affect a movement on the second liquid.

Sheridon2 shows that if two droplets are expanded the resulting color will be seen as the combination of the color of those two droplets (See Fig. 14, items 170-172, in description See Col. 8, Lines 50-56). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement color liquids in Sheridon2 apparatus so at least two of the droplets of the set will expand in a space commonly shared by the droplets of each set to create a color pixel of an image (See Col. 1, Lines 45-48).

5. Claims 5-6, 10-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridon2 as aforementioned in claims 4 and 9 in view of Comiskey et al.

Sheridon2 does not teach light reflecting surface or a light source located on the outer surface of the second sheet.

Comiskey et al. teaches a light reflecting surface or a light source located on the outer surface of the second sheet (See Col.3, Lines 35-38). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Comiskey et al. approach in Sheridon2 apparatus in order to change display color on the first substrate upon activation of the switch (See Col.2, Lines 64-65).

6. Claims 17-21, 24-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridon1 in view of Comiskey et al. and further in view of Mumford (US Patent No. 6,377,249 B1).



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As to claim 17, Sheridan1 teaches an electronic display with a stylus, wherein electrically insulating droplets are located in an electrolyte (See Fig. 11, items 102, 94, in description See Col. 3, Lines 39-46 and Col. 7, Lines 15-50), and further wherein the function of the stylus is that when it delivers a suitable electrical potential at its tip which is of a certain polarity, and one or more counter electrodes located on opposite side of a hydrophobic polymer layer from the droplets simultaneously have an appropriate electrical potential of opposite polarity to that delivered by the stylus applied to it or them, then droplets adjacent to the charged counter electrode will be induced to move towards the charged counter electrodes (See Fig. 11, items 102, 94, in description See Col. 7, Lines 15-50), a top layer of insulating and transparent material, which may be hydrophobic polymer; a bottom sheet of hydrophobic polymer layer (See Fig. 3, items 12, 14, in description See Col. 3, Lines 31-35); an electrolyte located between the top and bottom layers; one or more droplets of a liquid insulating material, such as silicone oil located in electrolyte (See Fig. 1, items 22, 24, in description see Col. 3, Lines 39-47); any suitable delimiting means preventing droplets from moving outside their respective designated area (See Fig. 13-15, items 170, 172, 174, 180, 182, 184, in description See Col. 8, Lines 5-20).

Sheridan1 does not teach wherein the liquid droplets are moved in respect of differently-colored light filters adjacent to the droplets by electrowetting and/or electrostatic means, so that light passing through appropriately-positioned droplets may also pass through the color filters adjacent to the droplet, and thereby change the color of the light, more than one light filter of more than one different color; one or more separately-addressable counter-electrodes separated by at least one hydrophobic polymer layer from droplet; and a light reflective surface located on

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the same side of the polymer layer as the counter-electrode are located; a switch means associated with the stylus whereby different counter electrode could be switched on, or modified, according to which color the stylus is to 'write' in.

Comiskey et al. teaches wherein the liquid droplets are moved in respect of differently-colored light filters adjacent to the droplets by electrowetting and/or electrostatic means, so that light passing through appropriately-positioned droplets may also pass through the color filters adjacent to the droplet, and thereby change the color of the light, more than one light filter of more than one different color; one or more separately-addressable counter-electrodes separated by at least one hydrophobic polymer layer from droplet; and a light reflective surface located on the same side of the polymer layer as the counter-electrode are located (See Fig. 14a, 14b, items 144a, 144b, 144c, in description See Col.15, Lines 8-58 and Col. 3, Lines 36-39), a switch means associated with the stylus whereby different counter electrode could be switched on, or modified (See Fig. 13, items 132, 134, in description See Col.14, Lines 57-68), according to which color the stylus is to 'write' in (See Fig. 14a, items 144a,144b,144c, in description see Col. 15, Lines 8-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Comiskey et al. approach in Sheridan1 apparatus in order to change display color on the first substrate upon activation of the switch (See Col.2, Lines 64-65).

Sheridon1 and Comiskey et al. do not teach a stylus electrically linked to a control system as a microprocessor IC which is in turn linked to the display system.

Mumford teaches a stylus electrically linked to a control system as a microprocessor IC which is in turn linked to the display system (See Fig. 1, items 12,16,18,26,20, in description see Col. 6, Lines 15-30). It would have been obvious to one of ordinary skill in the art at the time of

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the invention to implement Mumford approach in Sheridon1 and Comiskey et al. apparatus in order to change display color on the first substrate upon activation of the switch (See Col.2, Lines 64-65 in Comiskey reference).

As to claim 18, Sheriton1 teaches a power source for display See Fig. 11, items 86,102,P, in description See Col. 7, Lines 33-36).

As to claim 19, Comiskey et al. teaches an additional electrode of opposite polarity that applied to the currently-charged counter electrodes is supplied in direct connection to the electrolyte (See Fig. 1a, item 14, in description See Col. 5, Lines 13-19).

As to claim 20, Sheriton1 teaches an additional electrode of opposite polarity that applied to the currently-charged counter electrodes is supplied into a position immediately adjacent to the electrolyte, but which is electrically insulated from the electrolyte (See Fig.1, item18, in description See Col. 2, Lines 51-52).

As to claim 21, Mumford teaches stylus tip is electrically insulated (See Fig. 1, item 21, in description See Col. 6, Lines 31-32).

As to claim 24, Sheriton1 teaches a pattern of areas of different wettability is present on the polymer layer (See Fig. 14, items 170-174, 180-184, in description See Col.8, Lines 19-35).

As to claims 25-26, Sheriton1 teaches polar droplets are located in an insulated liquid and are immiscible with the insulating liquid, and with each other (See Fig. 1, items 22,24, 11,12, in description see Col.3, lines 39-47).

As to claim 27, obviously, if not inherently since power supply must have two polarity, one negative or positive terminal could be connected to ground plane (See Fig. 11, items 102 and P).

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As to claims 29-30, Sheriton1 teaches upper and lower layers of material are made from non-polymer materials (See Fig. 3, items 12, 14, in description See Col.3, Lines 26-28).

As to claim 28, 31-33 Sheriton1 teaches droplets are induced with electrical potential of a particular polarity and liquid is an insulating liquid or air (See Fig. 1, 11, items 102, 100, 90, in description See Col.3, Lines 38-47).

As to claim 34, Comiskey et al. teaches a light source or light reflecting surface located on the outer surface of the second sheet (See Col.3, Lines 35-38).

7. Claims 22-23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The Ikeda et al. (US Patent No. 6,221,267 B1) reference discloses methods for making spinnable ball, display medium and display device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Is  
November 27, 2002

  
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